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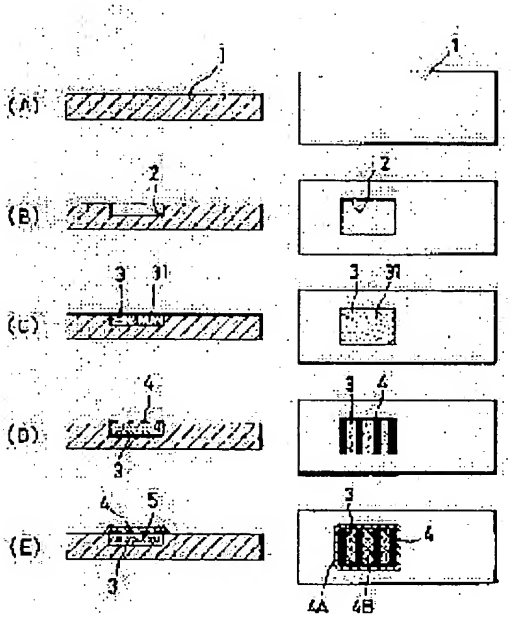
(54) METALLIC SPECTACLE PARTS PROVIDED WITH LIGHT EMITTING PATTERN AND ITS DECORATING METHOD

(57)Abstract:
PROBLEM TO BE SOLVED: To obtain metallic spectacle parts where a pattern is imparted in addition to light emitting color by filling a plastic resin including a luminous pigment in a recessed part provided in the spectacle parts, hardening it and providing an optical shielding layer in a pattern shape on the front surface of the hardened plastic resin.
SOLUTION: The recessed part 2 is formed in the metallic spectacle parts 1. The recessed part 2 is formed as an area having required largeness for a place where the light emitting pattern is imparted. When the spectacle parts 1 are a temple, the range of 15-35mm from the confronting surface of the temple with a bracket at the rear side of the temple is adopted in the recessed part 2 to be formed. The luminous agent 31 is filled in a part where the recessed part 2 is provided in a state where it is mixed with the plastic resin 3. The part where the plastic resin 3(including the luminous agent 31) is filled is hardened so as to provide the light shielding layer 4 is provided in the pattern shape in the filling part. A protecting film 5 is coated on the light shielding layer 4.



LEGAL STATUS

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CLAIMS

[Claim(s)]
[Claim 1] The spectacles parts with which the luminescence pattern characterized by preparing the optical filter layer in the front face of the plastics resin portion with which the crevice of the spectacles parts fabricated with the metal is filled up with the plastics containing a **** pigment, and it this filled up was given.
[Claim 2] The spectacles parts with which the luminescence pattern characterized by preparing an optical filter layer in the front face of the plastics resin portion with which the crevice of the spectacles parts fabricated with the metal is filled up with the plastics containing a **** pigment, and it this filled up, and forming the protective coat on an optical filter layer was given.
[Claim 3] The spectacles parts with which the luminescence pattern according to claim 1 or 2 characterized by being the coloring layer which the optical filter layer was colored partially was given.
[Claim 4] The spectacles parts with which the luminescence pattern according to claim 1 or 2 characterized by being the layer which the coloring layer printed was given.
[Claim 5] The spectacles parts with which the luminescence pattern according to claim 1 or 2 characterized by being the layer which the coloring layer applied was given.
[Claim 6] The spectacles parts with which the claim 1 to which spectacles parts are temples and a luminescence pattern is characterized by being in the range of 15-35mm from the abutting surface of a temple and a bracket in the background of a temple, or the luminescence pattern of five given in any 1 term was given.
[Claim 7] The ornament method characterized by preparing an optical filter layer in the shape of a pattern to the front face of the plastics resin which was filled up with the plastics resin which contains a **** pigment to this crevice after establishing a crevice in the spectacles parts which are the ornament methods for giving a luminescence pattern to spectacles parts, and consist of a metal, was made to harden it, and was hardened after that.
[Claim 8] The ornament method characterized by to have been filled up with the plastics resin which contains a **** pigment to this crevice after establishing a crevice in the spectacles parts which are the ornament methods for giving a luminescence pattern to spectacles parts, and consist of a metal, to have stiffened it, to have prepared the optical filter layer in the shape of a pattern to the front face of the plastics resin hardened after that, and to form a protective coat on an optical filter layer after that further.
[Claim 9] The ornament method according to claim 7 or 8 characterized by grinding the front face and forming flat-tapped with the front face of spectacles parts after filling up with and stiffening the plastics resin which contains a **** pigment to a crevice.
[Claim 10] The claims 7 and 8 characterized by preparing an optical filter layer by printing, or the ornament method given in nine.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] this invention relates to the metal spectacles part which has a luminescence pattern, and its ornament method in more detail about the spectacles which have a luminescence pattern.
[0002]
[Description of the Prior Art] If it removes and forgets in a predetermined place when night etc. is dark and it uses spectacles, it will not be found easily. Although there should just be a mark in finding it, the mark must also be able to be checked by looking also in darkness. Since it is such, what applied ****** to the parts which constitute spectacles is developed.
[0003] The technology which gave the luminescence with the **** matter is indicated by JP,64-6492,B etc. This forms a crevice in a lens frame or a vine, and gives the luminescence by being filled up with the paint which made the principal component the thermoplastics which added ******. Thus, if the luminescence is only given, it is enough just to fill up the crevice of spectacles parts with ******.
[0004] It is however, less unsatisfactory as spectacles only by fashion-izing and individualization having progressed more and giving the mere luminescence recently. That is, the spectacles which are rich in the ornament nature which it not only gives the luminescence, but gave the pattern in addition to the luminescent color are called for. In order to give a pattern, it is required to form the crevice of the conventional example in the shape of a pattern finely.
[0005] However, although it is easy to carry out comparatively fine processing when glasses parts are synthetic resin, in the case of metaled glasses parts, it is very difficult [it] to form the crevice finely. In order to give a fine pattern especially, it is necessary to prepare the fine crevice according to it, therefore, naturally many processing man days are needed for manufacture of glasses parts, and it becomes disadvantageous also in cost. Since it is such, giving the pattern of ****** to glasses parts, especially metallic glasses parts has a problem in practice. this invention is performed under such a technical background.
[0006]
[Problem(s) to be Solved by the Invention] this invention aims at offering the glasses part and its ornament method of the metallicity to which the pattern was given further in addition to the luminescent color.
[0007]
[Means for Solving the Problem] A deer is carried out, and as a result of repeating research wholeheartedly to such a technical problem, by preparing an optical filter layer on ********, this invention person etc. finds out that a pattern can be formed and completes this invention based on this knowledge.
[0008] That is, this invention is the ornament method for giving a luminescence pattern to 1 and glasses parts, it is filled up with the plastics resin which contains a **** pigment to this crevice after establishing a crevice in the glasses parts which consist of a metal, stiffens it, and consists in the ornament method which prepared the optical filter layer in the shape of a pattern to the front face of the hardened plastics resin after that.
[0009] And it is filled up with the plastics resin which contains a **** pigment to this crevice after

establishing a crevice in the spectacles parts which are the ornament methods for giving a luminescence pattern to 2 and spectacles parts, and consist of a metal, and it is stiffened, and after that, an optical filter layer is prepared in the shape of a pattern to the front face of the hardened plastics resin, and it consists in the ornament method in which the protective coat was formed on the optical filter layer, further.
[0010] And after filling up with and stiffening the plastics resin which contains a **** pigment to 3 and a crevice again, the front face is ground and it consists in the front face of spectacles parts, the above (1) formed flat-tapped, or the ornament method of (2).
[0011] And it consists in the ornament method of of 4, the above (1) which prepares an optical filter layer by printing, (2), or (3) again.
[0012] And it consists in the spectacles parts with which the luminescence pattern by which the optical filter layer is prepared in the front face of the plastics resin portion with which the crevice of the spectacles parts fabricated with 5 and the metal is filled up with the plastics containing a **** pigment, and was this filled up again was given.
[0013] And it consists in the spectacles parts with which the luminescence pattern by which an optical filter layer is prepared in the front face of the plastics resin portion with which the crevice of the spectacles parts fabricated with 6 and the metal is filled up with the plastics containing a **** pigment, and was this filled up again, and the protective coat is formed on the optical filter layer was given.
[0014] And it consists in the spectacles parts with which the above (5) or the luminescence pattern of (6) which is the coloring layer which 7 and the optical filter layer were colored partially was given again.
[0015] And it consists in the spectacles parts with which the above (5) or the luminescence pattern of (6) which is the layer which 8 and the coloring layer printed was given again.
[0016] And it consists in the spectacles parts with which ****** (5) or the luminescence pattern of (6) which is the layer which 9 and the coloring layer applied was given again.
[0017] And 10 and spectacles parts are temples and it consists in the spectacles parts with which the above (5) which has a luminescence pattern in the range of 15-35mm from the abutting surface of a temple and a bracket in the background of a temple, or the luminescence pattern of any 1 of (9) was given again.
[0018]
[Embodiments of the Invention] Drawing 1 is the block diagram having shown each process in the ornament method for giving a luminescence pattern to spectacles parts. Moreover, it is drawing (the cross section was shown in the left and front view was shown in the right) in which drawing 2 showed the change according to process of spectacles parts.
[0019] The ornament method of this invention includes each following process.
1, a crevice formation process [(B) Reference]
This process is a process by which a crevice 2 is formed in the prepared metallic spectacles parts 1 [(A) Reference]. Specifically, this crevice 2 is formed as a surface integral of only the size which is required for the place which should give a luminescence pattern. As the depth of a crevice 2, although based also on the thickness of the spectacles parts 1, 0, 3-0, and about 6mm are adopted, for example.
[0020] When the spectacles parts 1 are temples here, as for the crevice 2 which should be formed, the range of 15-35mm is adopted from the abutting surface of a temple and a bracket (**) by the background of a temple. According to the experiment of this invention persons, by 15mm or less, when it equips with spectacles, in order that luminescence by ****** 31 may go into a visual field, when it becomes offensive to the eye, and a face front face is contacted in 35mm or more and exhaustion of the optical filter layer 4 becomes a product from a bird clapper quickly, it turns out that it is disadvantageous. In addition, it is suitable if formation of this crevice 2 is performed by forging (especially press working of sheet metal).
[0021] 2, a ****** restoration process [(C) Reference]
This process is a process which fills up ****** 31 into the portion which formed the crevice 2 at all processes with the state where it mixed in the plastics resin 3. As a plastics resin used for restoration here, the hardenability resins (for example, an epoxy resin, hardened type acrylic resin, a urethane resin, etc.) by the heat or light which can contain ****** 31 are used. what emits light by applying light beforehand as ****** 31 -- it is -- for example, SrAl 2O4 etc. -- a **** pigment is used By the way, although it is filled up

so that it may become flat-tapped with a spectacles bill-of-materials side as much as possible in case it is filled up with a plastics resin, in order to make it flat-tapped more strictly, grinding a front face after this is also performed further.

[0022] This process is a process which stiffens the portion with which the plastics resin (****** was contained) was filled up by the last process like 3 and restoration ********. Although the method and conditions of hardening change with plastics resins used, when a 2 liquid hardening type epoxy resin is used, for example, they perform heating at 50 degrees C for 2 hours. Moreover, when ultraviolet-rays hardening type acrylic resin is used, ultraviolet rays are irradiated about 3 to 5 minutes, and are stiffened.

[0023] 4, an optical filter-layer grant process [(D) Reference]

This process is a process which forms the optical filter layer 4 in a packing fraction in the shape of a pattern. As a shading agent for forming the optical filter layer 4, a pigment (pigment ink), a color (color ink), metal oxide, etc. are adopted, for example. The range of 10-50micro is adopted, as thickness of this optical filter layer 4, when it is 10micro or less, an optical screening effect is inferior, and if it is 50micro or more, the degree which projects on the surface of parts will produce a level difference too much greatly.

[0024] Thus, since the optical filter layer 4 has the effect which intercepts light enough even if it is a film comparatively, a pattern comes out of it very sharply and clearly. Although the optical filter layer 4 considers as the colored layer, two effects, the optical screening effect in darkness and the color effect in a bright place, are expectable by coloring partially especially. The method of printing the technique of forming this optical filter layer 4 (an imprint also being included) and the method of applying directly are adopted.

[0025] 5, a protective coat covering process [(D) Reference]

This process is a process which covers a protective coat 5 on the optical filter layer 4 (coating). A protective coat 5 is coated on the optical filter layer 4 prepared in the shape of a pattern, and transparent synthetic resin, for example, an epoxy resin, a urethane resin, etc. are usually used from performing the duty which protects the pattern (character). The range of 50micro - 2mm is adopted, if it is 50micro or less, the feeling of irregularity of ****** will not be lost, and if it is 2mm or more, workability will become bad, and the problem of ablation produces the thickness of a protective coat 3.

[0026] However, when a protective coat 3 is heaped up in the shape of [of ******] a convex lens and is formed by the thickness near 2mm, the-like secondary effect an optical filter layer looks greatly according to the lens effect (the expansion effect) can be expected. In addition, this process may be skipped from a viewpoint of a cost side (refer to drawing 1). The luminescence pattern M is given to the metallic parts for spectacles as mentioned above.

[0027] In the metallic spectacles parts 1 of this invention, a crevice 2 is established in a front face in this way, and this crevice 2 is filled up with the plastics resin 3 containing ****** 31. And it is prepared the shape of a character and a pattern for which the optical filter layer 4 formed in the front face of this packing fraction of the shading agent asks. Light is not emitted, but the other portion emits light, and a character and a pattern appear the portion in which the optical filter layer was prepared.

[0028] Drawing 3 is drawing explaining the principle of the encaustic appearance. The light now emitted from [refer to drawing 3 (A)] and a **** pigment when the metallic spectacles parts 1 are seen in darkness is intercepted by the optical filter layer 4, only the portion in which the optical filter layer 4 was formed D (black) Looks dark, and a profile is divided. And in the portion in which the optical filter layer 4 is not formed, the light L emitted from a **** pigment passes as it is. Therefore, a pattern will appear as a result.

[0029] Moreover, when it sees in the state of [bright] darkness, the portion to which the optical filter layer 4 was given can have the ground color of the usual optical interception agent D1 seen [[refer to drawing 3 (B)]]. And when the optical filter layer 4 is colored partially (for example, blue 4A and red 4B), the ground color is visible to a color pattern [refer to drawing 2 (E)].

TECHNICAL FIELD

[The technical field to which invention belongs] this invention relates to the metal glasses part which has a luminescence pattern, and its ornament method in more detail about the glasses which have a luminescence pattern.

[Translation done.]

PRIOR ART

[Description of the Prior Art] If it removes and forgets in a predetermined place when night etc. is dark and it uses glasses, it will not be found easily. Although there should just be a mark in finding it, the mark must also be able to be checked by looking also in darkness. Since it is such, what applied ****** to the parts which constitute glasses is developed.

[0003] The technology which gave the luminescence with the **** matter is indicated by JP,64-6492,B etc. This forms a crevice in a lens frame or a vine, and gives the luminescence by being filled up with the paint which made the principal component the thermoplastics which added ******. Thus, if the luminescence is only given, it is enough just to fill up the crevice of glasses parts with ******.

[0004] It is however, less unsatisfactory as glasses only by fashion-izing and individualization having progressed more and giving the mere luminescence recently. That is, the glasses which are rich in the ornament nature which it not only gives the luminescence, but gave the pattern in addition to the luminescent color are called for. In order to give a pattern, it is required to form the crevice of the conventional example in the shape of a pattern finely.

[0005] However, although it is easy to carry out comparatively fine processing when glasses parts are synthetic resin, in the case of metaled glasses parts, it is very difficult [it] to form the crevice finely. In order to give a fine pattern especially, it is necessary to prepare the fine crevice according to it, therefore, naturally many processing man days are needed for manufacture of glasses parts, and it becomes disadvantageous also in cost. Since it is such, giving the pattern of ****** to glasses parts, especially metallic glasses parts has a problem in practice. this invention is performed under such a technical background.

[Translation done.]

EFFECT OF THE INVENTION

The-like secondary effect an optical filter layer looks greatly according to the (expansion effect) is expectable. In addition, this process may be skipped from a viewpoint of a cost side (refer to drawing 1).
The luminescence pattern M is given to the metallic parts for spectacles as mentioned above.
[0027] In the metallic spectacles parts 1 of this invention, a crevice 2 is established in a front face in this way, and this crevice 2 is filled up with the plastics resin 3 containing ****** 31. And it is prepared the shape of a character and a pattern for which the optical filter layer 4 formed in the front face of this packing fraction of the shading agent asks. Light is not emitted, but the other portion emits light, and a character and a pattern appear the portion in which the optical filter layer was prepared.
[0028] Drawing 3 is drawing explaining the principle of the encaustic appearance. The light now emitted from [refer to drawing 3 (A)] and a **** pigment when the metallic spectacles parts 1 are seen in darkness is intercepted by the optical filter layer 4, only the portion in which the optical filter layer 4 was formed D (black) Looks dark, and a profile is divided. And in the portion in which the optical filter layer 4 is not formed, the light L emitted from a **** pigment passes as it is. Therefore, a pattern will appear as a result.
[0029] Moreover, when it sees in the state of [bright] darkness, the portion to which the optical filter layer 4 was given can have the ground color of the usual optical interception agent D1 seen [[refer to drawing 3 (B)]]. And when the optical filter layer 4 is colored partially (for example, blue 4A and red 4B), the ground color is visible to a color pattern [refer to drawing 2 (E)]. Moreover, the portion except the optical filter layer 4 having been given serves as the ground color L1 of the plastics resin with which ****** 31 was contained.
[0030] Since it is such, in darkness, the portion which the optical filter layer 4 prepared functions as a black portion which divides the profile of a character and a pattern, and functions as a color pattern tinctured with color in a bright place. Moreover, in darkness, the portion which does not form the optical filter layer 4 functions as a portion which emits light, and when bright, it functions as canvas to the optical filter layer 4.
[0031] Drawing 4 shows each spectacles part which gave the luminescence pattern by the decoration of this invention. Drawing 4 (A) shows the example applied to Bracket A. Drawing 4 (B) shows the example applied to Temple B. In this case, as point ** was carried out, the range of 15mm - 35mm (P1-P2) is suitable for the position which establishes a crevice 2 in a temple in the distance from abutting-surface [of a bracket and a temple] P in the rear face of a temple. Drawing 4 (C) shows the example applied to Bridge C. Drawing 4 (D) shows the example applied to the rim frame D.

[Translation done.]

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] this invention aims at offering the glasses part and its ornament method of the metallicity to which the pattern was given further in addition to the luminescent color.

[Translation done.]

MEANS

[Means for Solving the Problem] A deer is carried out, and as a result of repeating research wholeheartedly to such a technical problem, by preparing an optical filter layer on ********, this invention person etc. finds out that a pattern can be formed and completes this invention based on this knowledge.
[0008] That is, this invention is the ornament method for giving a luminescence pattern to 1 and spectacles parts, it is filled up with the plastics resin which contains a **** pigment to this crevice after establishing a crevice in the spectacles parts which consist of a metal, stiffens it, and consists in the ornament method which prepared the optical filter layer in the shape of a pattern to the front face of the hardened plastics resin after that.
[0009] And it is filled up with the plastics resin which contains a **** pigment to this crevice after establishing a crevice in the spectacles parts which are the ornament methods for giving a luminescence pattern to 2 and spectacles parts, and consist of a metal, and it is stiffened, and after that, an optical filter layer is prepared in the shape of a pattern to the front face of the hardened plastics resin, and it consists in the ornament method in which the protective coat was formed on the optical filter layer, further.
[0010] And after filling up with and stiffening the plastics resin which contains a **** pigment to 3 and a crevice again, the front face is ground and it consists in the front face of spectacles parts, the above (1) formed flat-tapped, or the ornament method of (2).
[0011] And it consists in the ornament method of of 4, the above (1) which prepares an optical filter layer by printing, (2), or (3) again.
[0012] And it consists in the spectacles parts with which the luminescence pattern by which the optical filter layer is prepared in the front face of the plastics resin portion with which the crevice of the spectacles parts fabricated with 5 and the metal is filled up with the plastics containing a **** pigment, and was this filled up again was given.
[0013] And it consists in the spectacles parts with which the luminescence pattern by which an optical filter layer is prepared in the front face of the plastics resin portion with which the crevice of the spectacles parts fabricated with 6 and the metal is filled up with the plastics containing a **** pigment, and was this filled up again, and the protective coat is formed on the optical filter layer was given.
[0014] And it consists in the spectacles parts with which the above (5) or the luminescence pattern of (6) which is the coloring layer which 7 and the optical filter layer were colored partially was given again.
[0015] And it consists in the spectacles parts with which the above (5) or the luminescence pattern of (6) which is the layer which 8 and the coloring layer printed was given again.
[0016] And it consists in the spectacles parts with which ****** (5) or the luminescence pattern of (6) which is the layer which 9 and the coloring layer applied was given again.
[0017] And 10 and spectacles parts are temples and it consists in the spectacles parts with which the above (5) which has a luminescence pattern in the range of 15-35mm from the abutting surface of a temple and a bracket in the background of a temple, or the luminescence pattern of any 1 of (9) was given again.
[0018]
[Embodiments of the Invention] Drawing 1 is the block diagram having shown each process in the ornament method for giving a luminescence pattern to spectacles parts. Moreover, it is drawing (the cross section was shown in the left and front view was shown in the right) in which drawing 2 showed the change according to

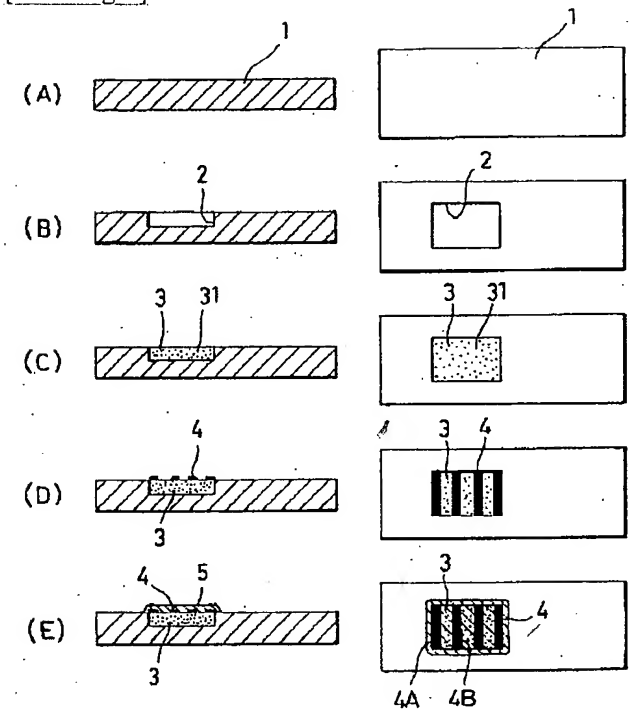
process of spectacles parts.
[0019] The ornament method of this invention includes each following process.
1, a crevice formation process [(B) Reference]
This process is a process by which a crevice 2 is formed in the prepared metallic spectacles parts 1 [(A) Reference]. Specifically, this crevice 2 is formed as a surface integral of only the size which is required for the place which should give a luminescence pattern. As the depth of a crevice 2, although based also on the thickness of the spectacles parts 1, 0, 3-0, and about 6mm are adopted, for example.
[0020] When the spectacles parts 1 are temples here, as for the crevice 2 which should be formed, the range of 15-35mm is adopted from the abutting surface of a temple and a bracket (**) by the background of a temple. According to the experiment of this invention persons, by 15mm or less, when it equips with spectacles, in order that luminescence by ****** 31 may go into a visual field, when it becomes offensive to the eye, and a face front face is contacted in 35mm or more and exhaustion of the optical filter layer 4 becomes a product from a bird clapper quickly, it turns out that it is disadvantageous. In addition, it is suitable if formation of this crevice 2 is performed by forging (especially press working of sheet metal).
[0021] 2, a ****** restoration process [(C) Reference]
This process is a process which fills up ****** 31 into the portion which formed the crevice 2 at all processes with the state where it mixed in the plastics resin 3. As a plastics resin used for restoration here, the hardenability resins (for example, an epoxy resin, hardened type acrylic resin, a urethane resin, etc.) by the heat or light which can contain ****** 31 are used. what emits light by applying light beforehand as ****** 31 -- it is -- for example, SrAl 2O4 etc. -- a **** pigment is used By the way, although it is filled up so that it may become flat-tapped with a spectacles bill-of-materials side as much as possible in case it is filled up with a plastics resin, in order to make it flat-tapped more strictly, grinding a front face after this is also performed further.
[0022] This process is a process which stiffens the portion with which the plastics resin (****** was contained) was filled up by the last process like 3 and restoration ********. Although the method and conditions of hardening change with plastics resins used, when a 2 liquid hardening type epoxy resin is used, for example, they perform heating at 50 degrees C for 2 hours. Moreover, when ultraviolet-rays hardening type acrylic resin is used, ultraviolet rays are irradiated about 3 to 5 minutes, and are stiffened.
[0023] 4, an optical filter-layer grant process [(D) Reference]
This process is a process which forms the optical filter layer 4 in a packing fraction in the shape of a pattern. As a shading agent for forming the optical filter layer 4, a pigment (pigment ink), a color (color ink), metal oxide, etc. are adopted, for example. The range of 10-50micro is adopted, as thickness of this optical filter layer 4, when it is 10micro or less, an optical screening effect is inferior, and if it is 50micro or more, the degree which projects on the surface of parts will produce a level difference too much greatly.
[0024]

* NOTICES *

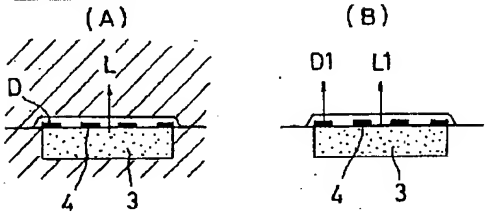
1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 2]



[Drawing 3]



[Drawing 1]

(A)

工程 1 凹部形成工程

⇩

工程 2 蓄光剤充填工程

⇩

工程 3 充填部硬化工程

⇩

工程 4 光遮断層付与工程

(B)

工程 1 凹部形成工程

⇩

工程 2 蓄光剤充填工程

⇩

工程 3 充填部硬化工程

⇩

工程 4 光遮断層付与工程

⇩

工程 5 保護膜被覆工程

[Drawing 4]